

# Using LAR-IAC Data in the GIST Program at the University of Southern California

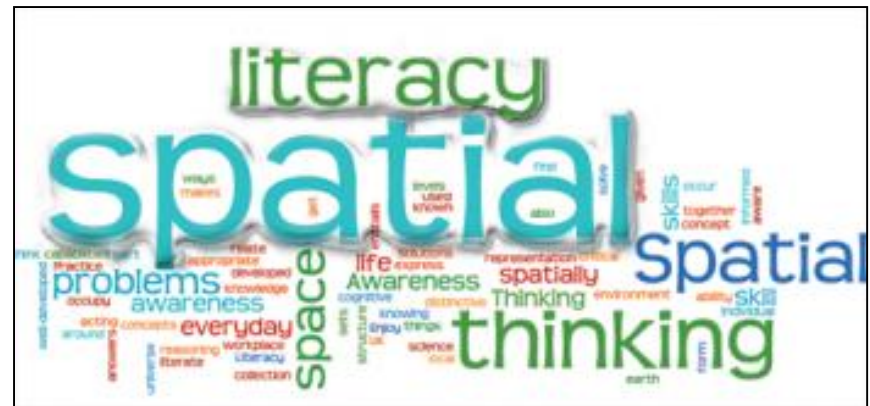
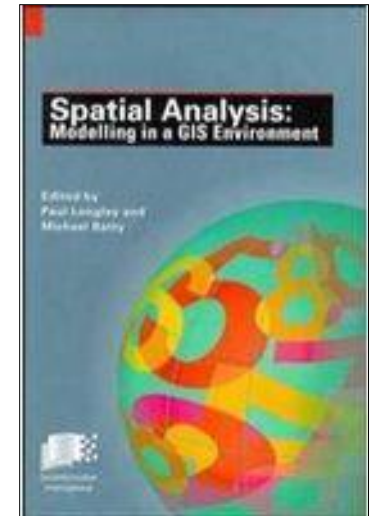
Su Jin Lee

Spatial Sciences Institute  
University of Southern California

LAR-IAC4 Kick Off Meeting  
September 12, 2013

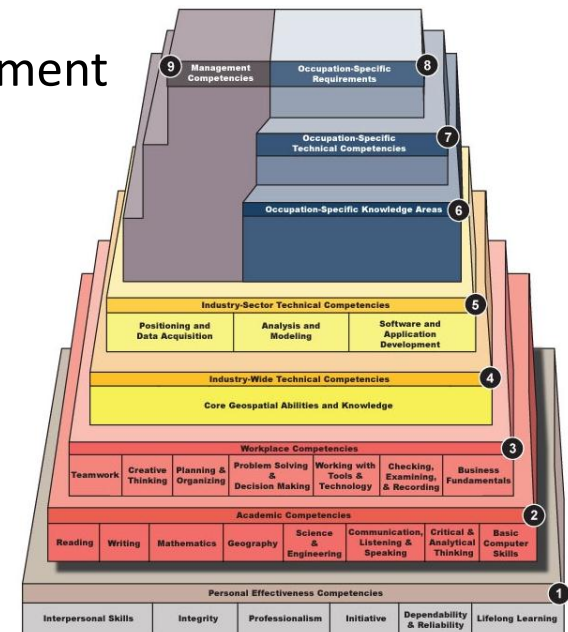
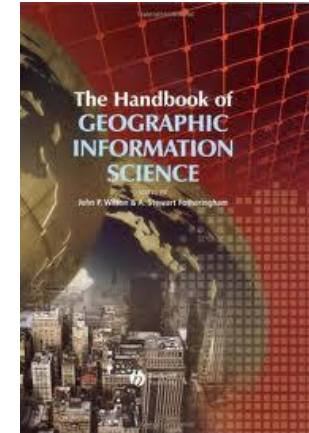
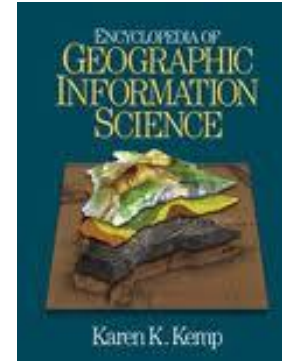
# Spatial Sciences Institute

- Established July 2010
- New classes
- Minor in Spatial Studies
- **B.S. in GeoDesign**
- Newly enhanced M.S. & Graduate Certificate in Geographic Information Science & Technology
- **Proposed Ph.D. in Population, Health & Place**
- Enhanced support for spatially oriented research and teaching across USC



# Geographic Information Sciences and Technology Programs

- Core courses
  - Concepts for Spatial Thinking
  - Spatial Databases
  - **GIS/GPS Field Techniques**
- Electives
  - Spatial Analysis & Modeling
  - Geospatial Technology Project Management
  - GIS Programming & Customization
  - Remote Sensing for GIS
  - Cartography & Visualization
  - Web GIS
  - Mobile GIS
- Master's Thesis



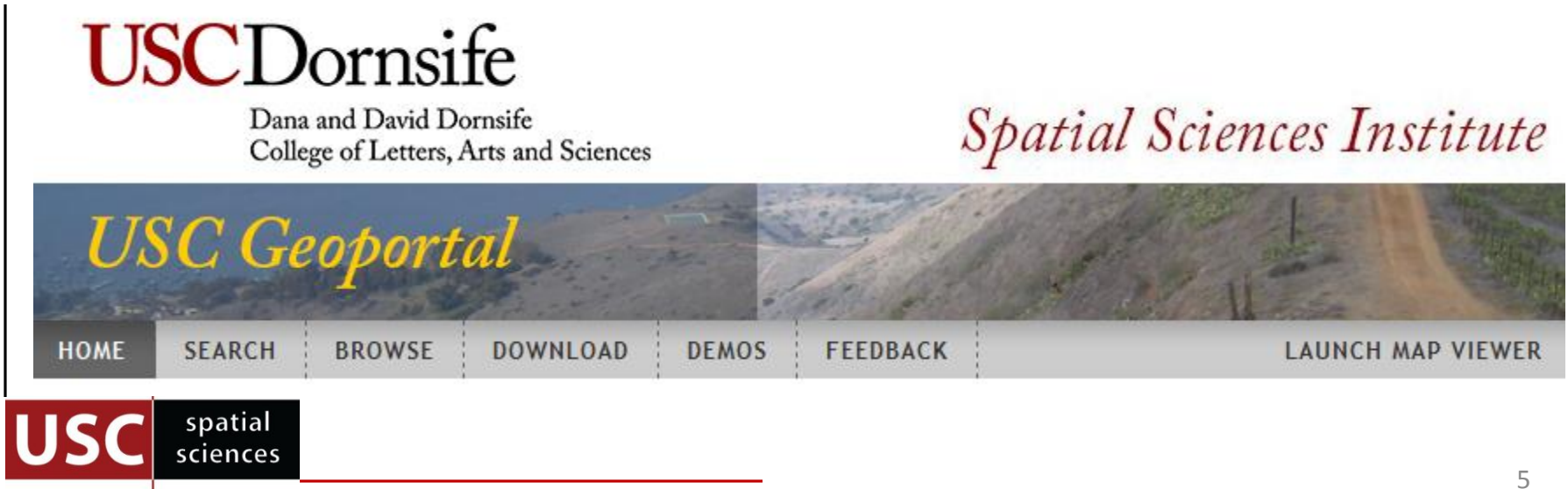
# LAR-IAC Data In GIST courses and MS Thesis Research

- Land Use/Land Cover Change
- Ecological Analysis
- Terrain Analysis
- Landscape Architecture
- Medicine
- Spread of Disease
- 3D Visualization
- Big Data



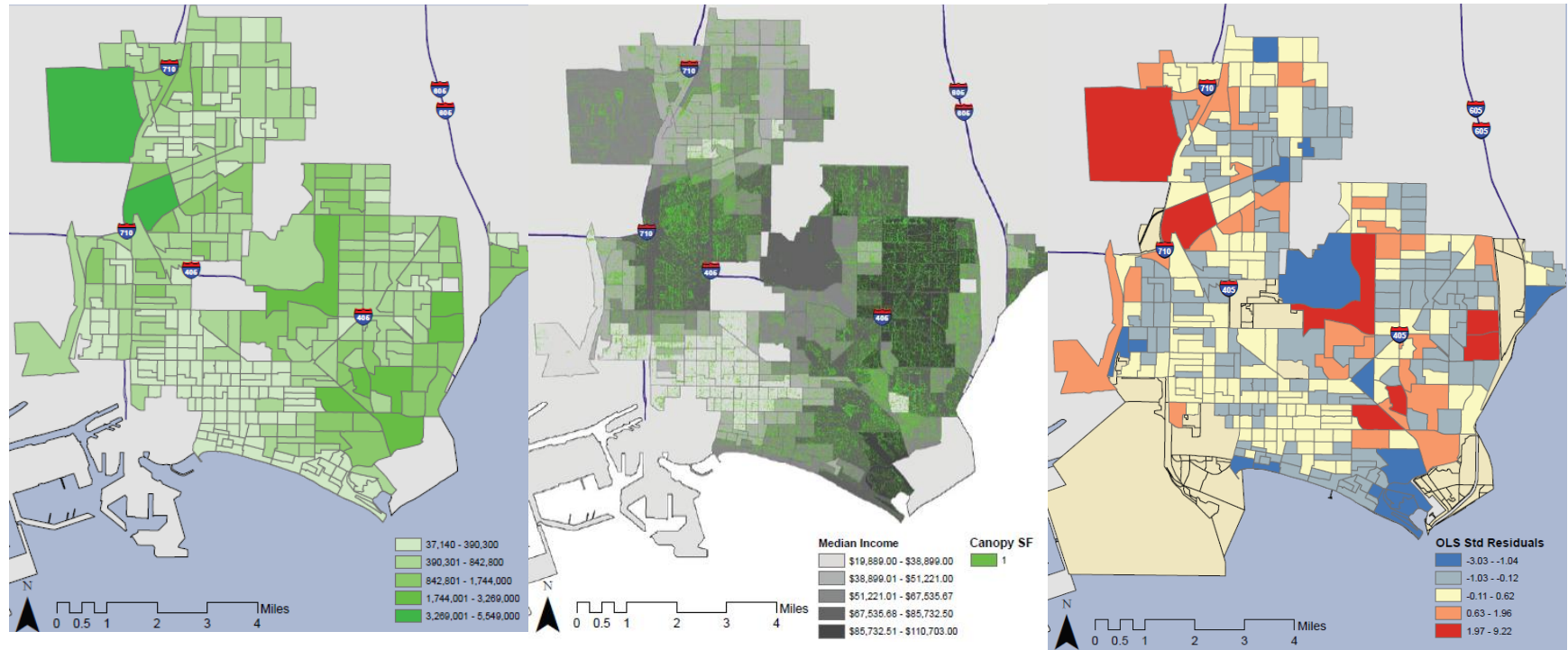
# Accessing the LAR-IAC Data

- SSI Geoportal is available
- Accessible to all USC students, faculty, staff
- Unlimited usage while enrolled at USC for school related work



# LAR-IAC Use Case: Street Trees in Long Beach

- Determining if the spatial distribution of street trees is equitable with respect to race and ethnicity, income, and housing tenure in the City of Long Beach



# LAR-IAC Use Case: USC Landscape Architecture Student Designs Exhibited at LA City Hall

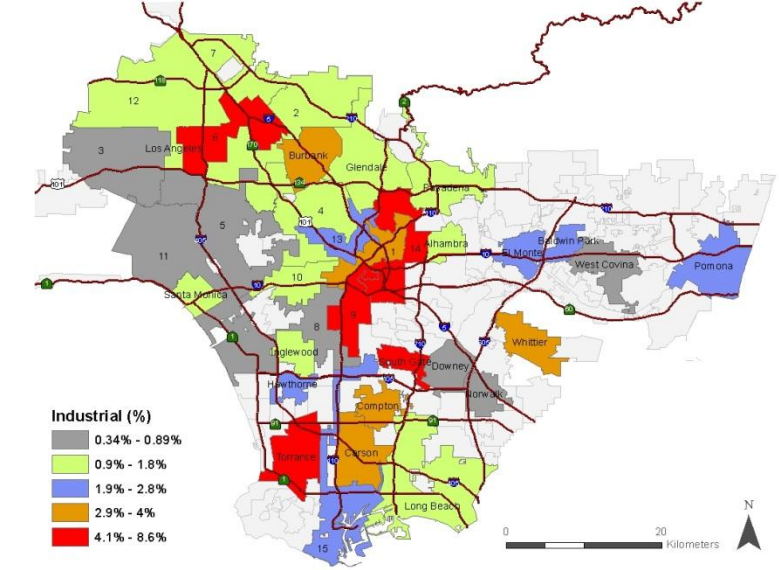
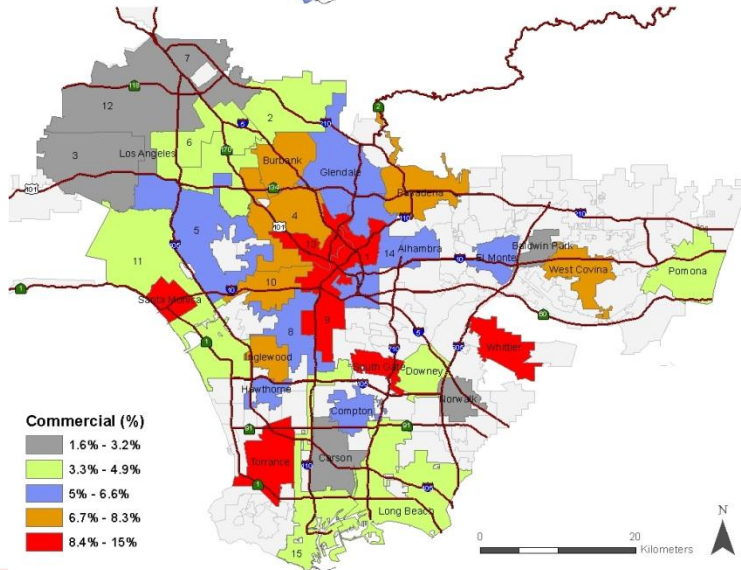
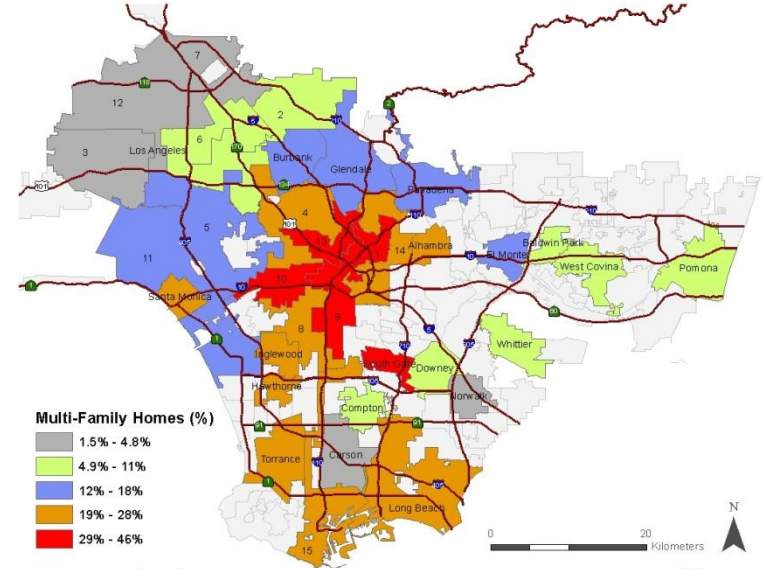
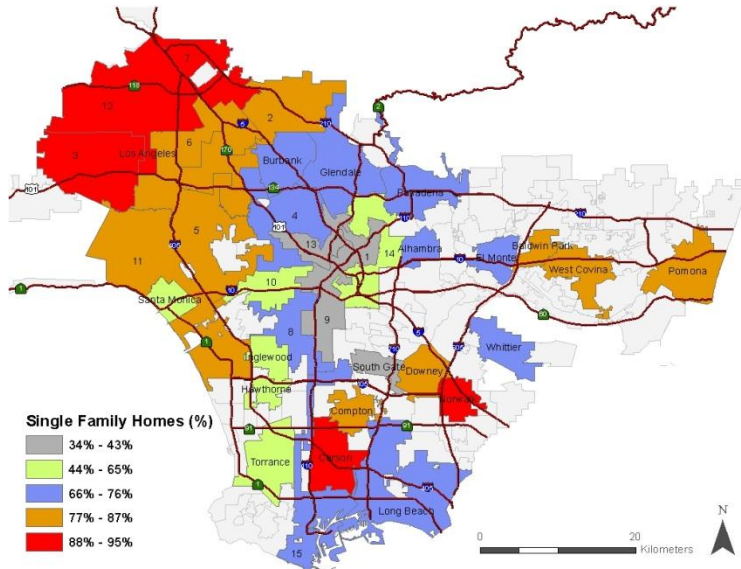
- Landscape Architecture design project in the last two years has used LARIAC data for site assessment and context mapping
- Building outlines
- Contour lines
- Digital Elevation Models



# LAR-IAC Use Case: Land Use Transitions

		Land uses in 2010							
		SFHs	MFHs	COMs	INDs	INSs	RECs	Others	Total
Land uses in 2000	SFHs	<b>734,177</b>	4,245	904	286	150	5	52	739,819
	MFHs	1,706	<b>160,583</b>	354	66	54	3	57	162,823
	COMs	307	498	<b>48,613</b>	335	212	53	43	50,061
	INDs	43	50	654	<b>19,277</b>	53	14	22	20,113
	INSs	64	42	115	8	<b>5,064</b>	11	5	5,309
	RECs	8	5	68	12	25	<b>846</b>	1	965
	Others	11,498	2,265	2,995	1,413	384	88	<b>3,309</b>	21,952
	Total	747,803	167,688	53,703	21,397	5,942	1,020	3,489	1,001,042

# LAR-IAC Use Case: Major Land Uses



# LARIAC Use Case: Land Cover Changes

- Measured trees, grass, structures, hardscapes, swimming pools, and undefined areas (shaded areas) in 2000 and 2008 aerial images



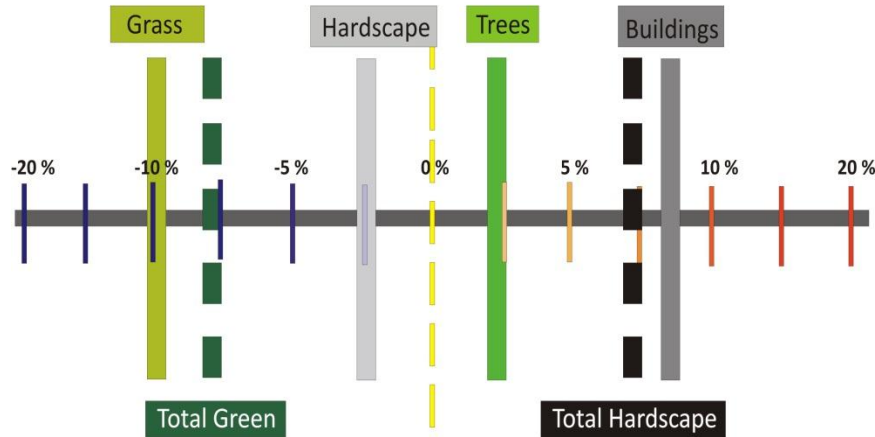
2000



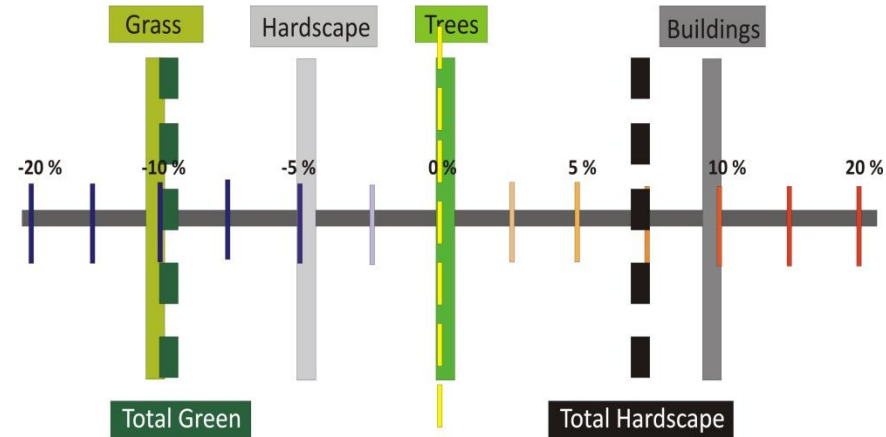
2008

# LAR-IAC Use Case: LC Change in Land Use

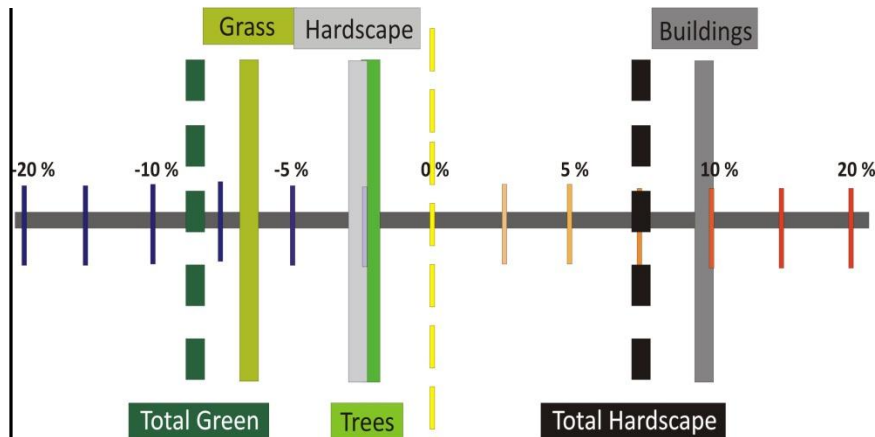
Single Residential



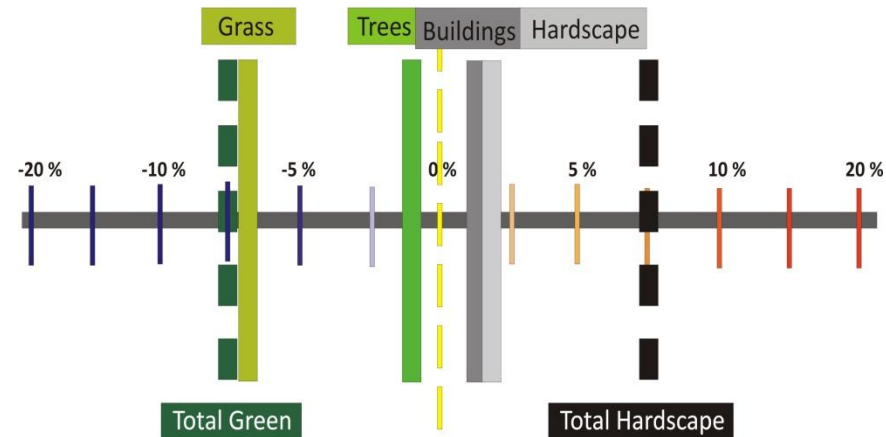
Multi Residential



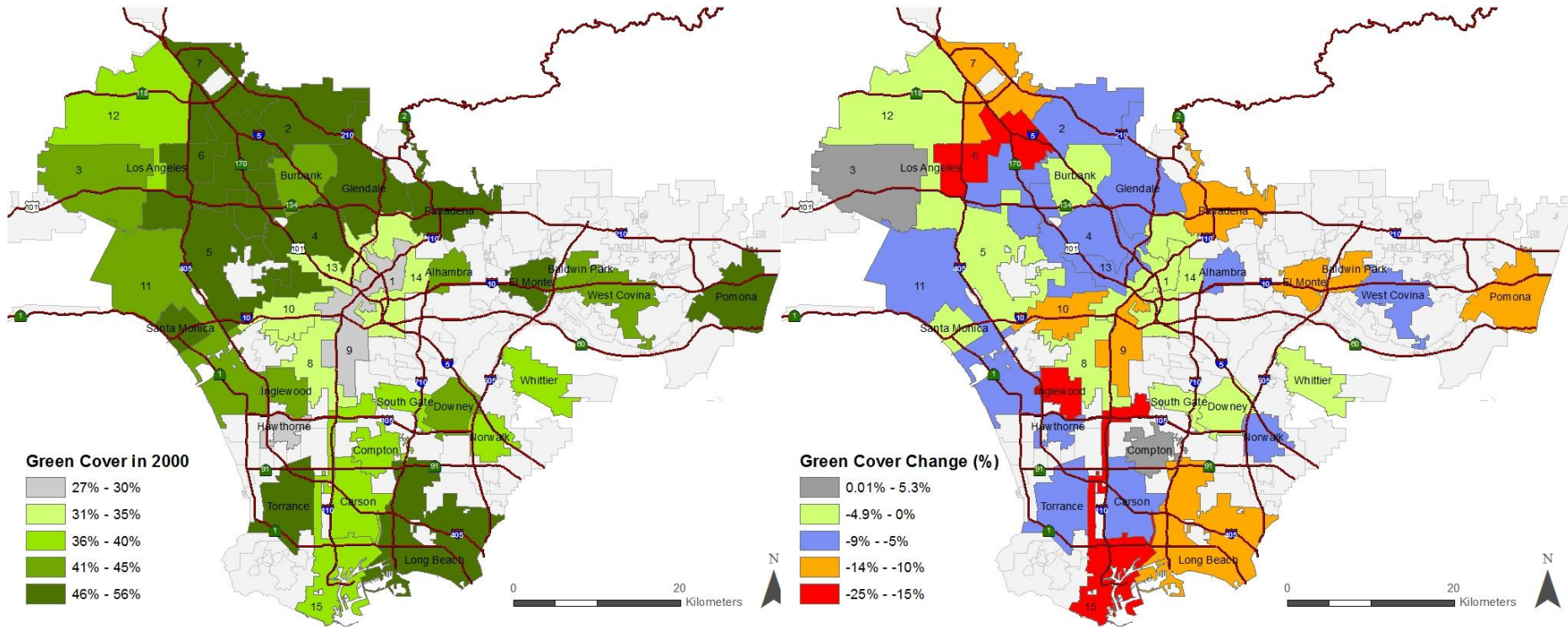
Commercial



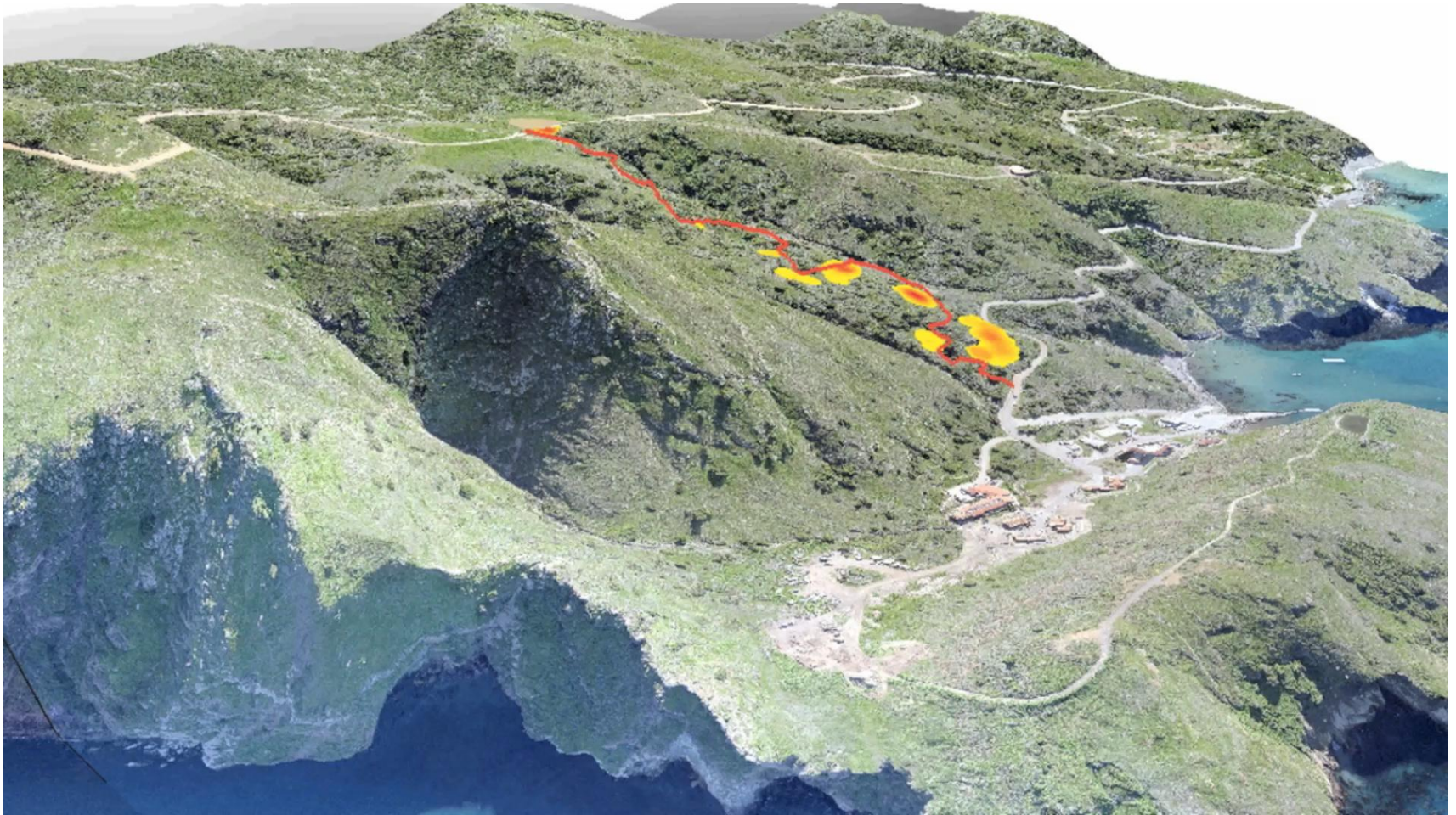
Industrial



# LAR-IAC Use Case: Percent Green Cover Change



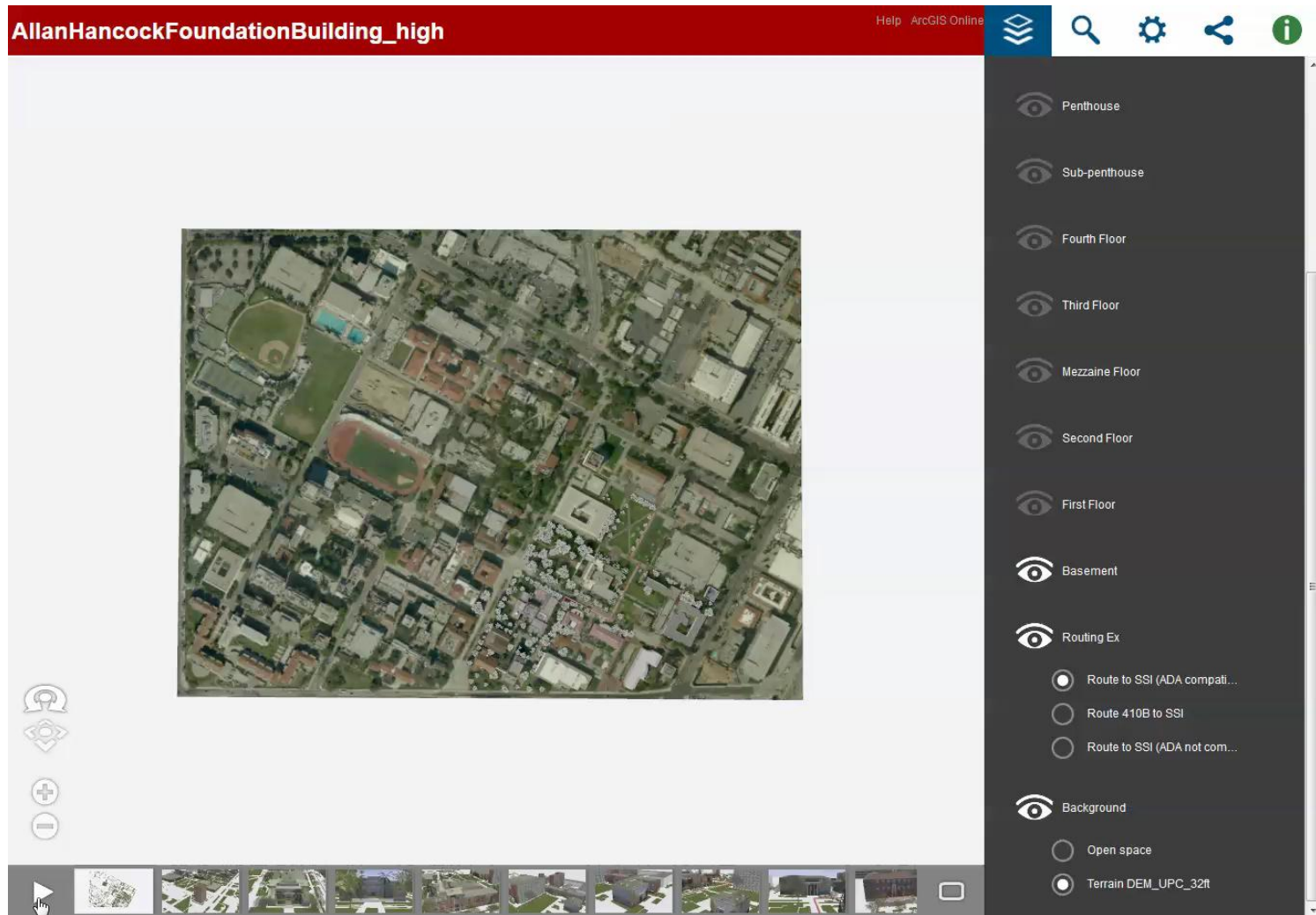
# LARIAC Use Case: Catalina Island



# LARIAC Use Case: USC WMSC



# LARIAC Use Case: USC Campus



Thank you

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